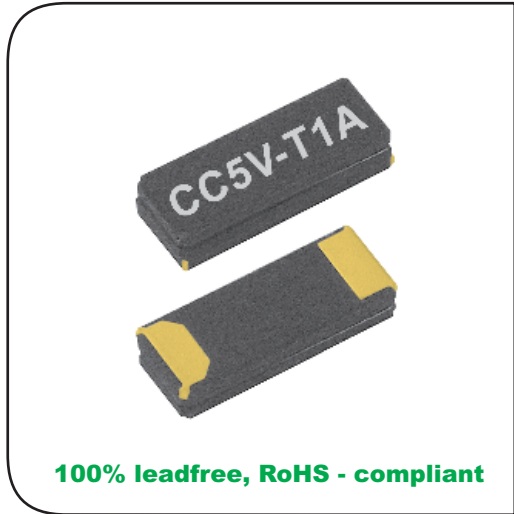
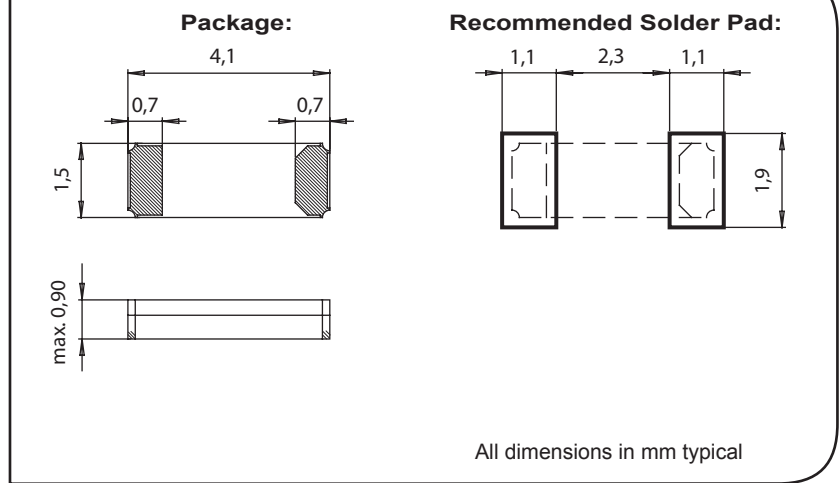


# CC5V-T1A

## Tuning Fork Crystal 32.768 kHz



### DIMENSIONS



**Miniature SMT ceramic package**  
**Package height 0.90 mm**  
**SMD-package in Tape and Reel**  
**Ind. and Ext. temperature ranges**  
**High stability**  
**Low aging**  
**Low power consumption**  
**High shock and vibration resistance**

### DESCRIPTION:

This SMD ceramic package has been specially designed for miniature industrial, telecom and medical applications.

The crystals are supplied in special trays (200 crystals per tray).

For pick-and-place equipment, the parts are available in 12 mm tape:

- 7" (178 mm) reel with 1'000 crystals
- 7" (178 mm) reel with 3'000 crystals
- 13" (330 mm) reel with 14'000 crystals

### ELECTRICAL CHARACTERISTICS AT 25°C:

Nominal Frequency	<sup>1)</sup> F <sub>L</sub>	32.768	kHz
Load capacitance	<sup>2)</sup> C <sub>L</sub>	7.0 / 9.0 / 12.5	pF
Frequency tolerance	<sup>3)</sup> ΔF/F	+/-20	ppm
		+/-100	ppm
Series resistance typ./max.	R <sub>S</sub>	50 / 70	kΩ
Motional capacitance typ.	C <sub>1</sub>	2.8	fF
Static capacitance typ.	C <sub>0</sub>	1.2	pF
Drive level max.	P	1.0	μW
Insulation resistance min.	R <sub>i</sub>	500	MΩ
Aging first year max.	ΔF/F	+/-3	ppm
Turnover temperature	T <sub>0</sub>	25 +/-5	°C
Frequency vs. temperature	ΔF/F <sub>0</sub>	-0.035 ppm/°C <sup>2</sup> (T - T <sub>0</sub> ) <sup>2</sup> +/-10%	ppm

1) Other frequencies on request.

2) Other load capacitances on request.

3) Tighter and wider frequency tolerances on request.

**STANDARD FREQUENCIES:**

<b>Frequency kHz</b>
32.768
Other frequencies on request

**ENVIRONMENTAL  
CHARACTERISTICS:**

		<b>Conditions</b>	<b>Max. Dev.</b>
Storage temp. range		-55 to +125°C	
TA Operating temperature range		-40 to +85°C	
TB Extended oper. temp. range		-40 to +125°C	
Shock resistance	ΔF/F	5000 g, 0.3 ms, ½ sine	+/-5 ppm
Vibration resistance	ΔF/F	20 g / 10–2000 Hz	+/-5 ppm

**TERMINATIONS AND  
PROCESSING:**

<b>Type</b>	<b>Termination</b>	<b>Processing</b>
CC5V-T1A	For SMD mounting Au plated pads	Reflow soldering 260°C / 20 s max.

**PRODUCT DESCRIPTION AND  
ORDERING INFORMATION:**

<b>CC5V-T1A</b>	<b>32.768kHz</b>	<b>12.5pF</b>	<b>+/-20ppm</b>	<b>TA</b>	<b>QC</b>
<u>Frequency F<sub>L</sub></u>	_____				
<u>C<sub>L</sub> Load Capacitance</u>	_____				
7.0 pF					
9.0 pF					
<b>12.5 pF</b>					
<u>Frequency tolerance</u>	_____				
+/- 20 ppm					
+/- 100 ppm					
	<u>Temperature Range</u>				_____
	TA = -40 to 85°C (Standard)				
	TB = -40 to +125°C				
<b>Optional:</b> if not defined, ,Standard' will apply	<u>Qualification</u>				_____
	QC = Commercial (Standard)				
	QM = Medical				
A unique part number will be generated for each product specification, i.e:					
20xxxx-MG01	1'000 pcs (in 12mm tape on 7" reel)				
20xxxx-MG03	3'000 pcs (in 12mm tape on 7" reel)				
20xxxx-PG14	14'000 pcs (in 12mm tape on 13" reel)				
Please contact us.					

All specifications subject to change without notice.



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